

The design of laptop computers that makes them so flexible and convenient also increases the likelihood that they will be used in settings that are not ergonomically configured and that may cause injuries.

The majority of laptop computers used by Laboratory employees are for telecommuting, according to a recent survey by the Laboratory’s Ergonomics Committee and the Computation Directorate. Employees also use them while commuting in a bus, car or vanpool; to access their email or meeting calendar; to give presentations; or to take along on business travel.

There are specific guidelines and recommendations for safe and healthy use of laptops, as there are for desktop computers. For example, you need to set up your laptop keyboard much as you would your regular keyboard. You also need to be aware of screen viewing distances and angles, screen height, upper limb and neck postures, and wrist position. Other points to consider are described in the following recommendations.

Recommendations

- Equip your laptop with a full-sized keyboard, monitor and mouse when you use it as your primary computer.
- Use a chair that provides good support for your lower back. If an ergonomic chair is not available, use a pillow or rolled-up towel to provide lower back support.
- Adjust your chair or work surface height to keep your arms in a neutral position.
- Place your wrist and hands in a neutral position. Avoid resting on the wrist while typing. Try using whole hand and arm movements to navigate around the keys. A tutorial called KeyMoves (Hazards Control class HS5316-W) is available on the Web (<http://eodd-server.llnl.gov/key-moves/welcome.html>).
- Keep elbows level with or slightly higher than the keyboard — at approximately 90 degrees.

- Make sure there is no glare on the screen. Rest your eyes frequently. Visual needs can be different than for a standard desktop computer. Contact your eye doctor if you experience discomfort.
- Adjust the angle of the monitor so that your head is slightly downward in a comfortable position.
- Try to type as lightly as possible.
- If your laptop has a glide point that is difficult to move, plug in an external mouse, and/or use key commands.
- Select a lightweight laptop.
- Use friction pads or a pillow to prevent the computer from sliding.
- Take frequent, short rest breaks.
- Report any symptoms of discomfort that may be associated with use of laptop computers as soon as they arise.

Guidelines for using laptops while on travel

When using a laptop on travel, make sure to set yourself up as ergonomically correct as possible. If you are in a hotel, conference room, or any other facility, don’t settle for putting your laptop on a desk, table, counter, or surface that is too high or that requires you to reach.

Options

- Ask if the hotel has a docking station for laptops. If not, ask if desktop computer workstations are available so that you can plug into their keyboard and monitor.
- Use a pillow, pad, or even folded towels to raise your chair high enough so that your elbows are level or slightly higher than the keyboard (elbows at approximately 90 degrees).

- If you can’t find a surface low enough, or a chair high enough, then use your lap as a laptop rest.
 - Sit so that your knees and hips are level, with feet on the floor or on a footrest. This will allow the laptop to rest comfortably on your lap.
 - Again, adjust the angle of the monitor so that your head is slightly downward in a comfortable position.
 - Use a chair that does not have armrests to give you room to move your arms.
- If you elect to place your computer on a food tray, and it is too high to achieve comfort, try raising your seat height by folding one or two blankets under you. If that doesn’t work, it may be best to use your lap.

Transportation

Laptops are often heavy, which means you should avoid carrying them with a handle. Try carrying them on your shoulder and use a bag with a padded shoulder strap.

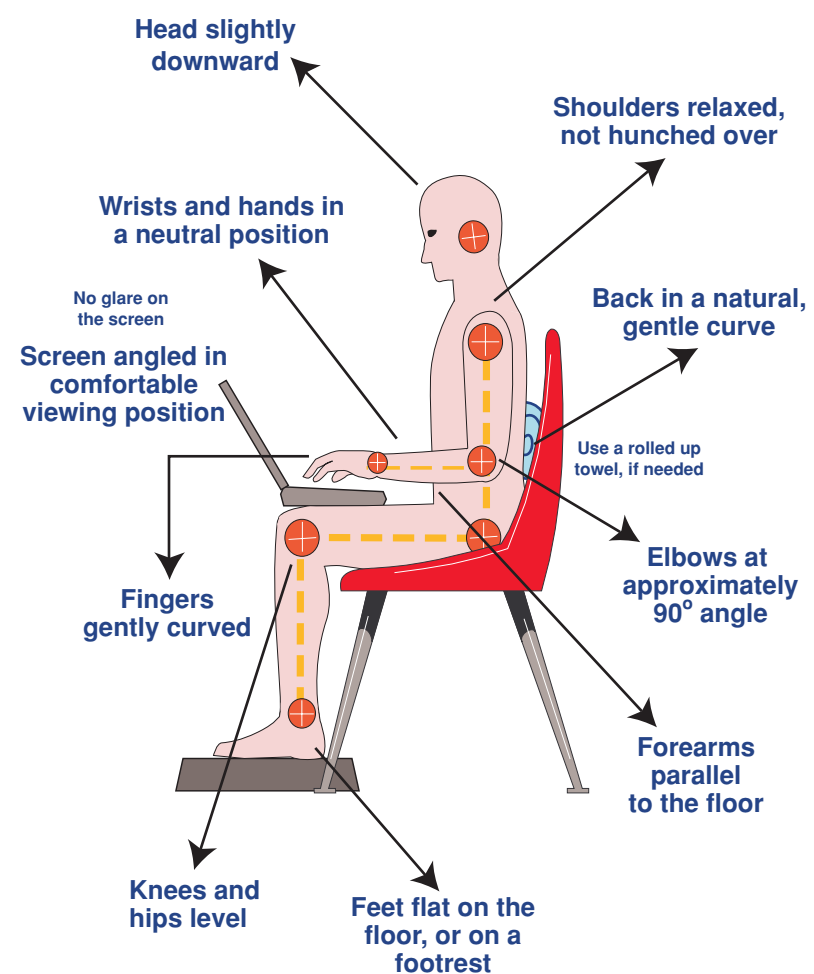
Pace Yourself

Take frequent breaks. Stand up and stretch. If you feel any strains or pains, stop what you are doing and experiment with different positions. The same rules of healthy computer use apply to laptops as well as desktops.

If you experience any discomfort that you think may relate to using a computer, ask your supervisor to request an ergonomic evaluation, or contact Health Services, 2-7459.

If you would like more information about using laptops, call Marlene Sandberg, 2-3771.

How to use your laptop and be ergonomically safe



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